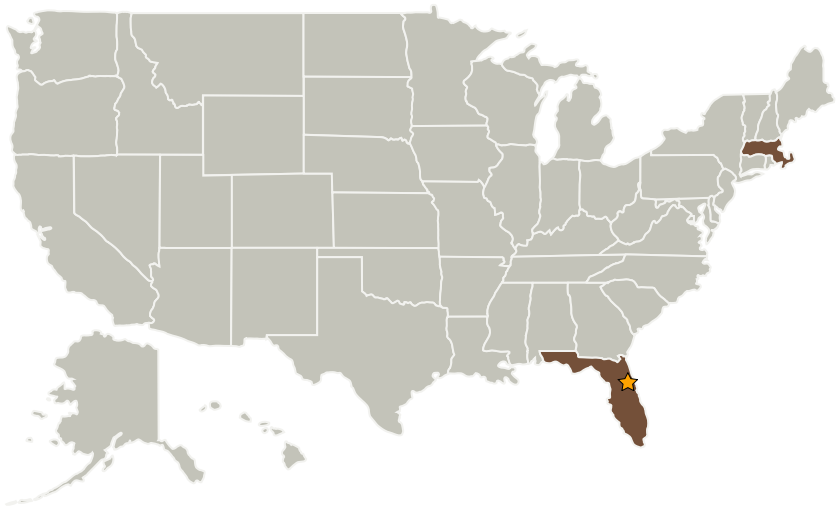
Advanced 3D Object Identification System, Phase I

Completed Technology Project (2006 - 2006)

Project Introduction

Optra will build an Advanced 3D Object Identification System utilizing three or more high resolution imagers spaced around a launch platform. Data from each imager will be analyzed in real time using a complex morphological image processing scheme to extract up to 100 objects of interest. These objects will then be individually tracked in the field-of-view of each imager then correlated between imagers to produce an accurate three-dimensional trajectory of each object with estimated ground impact position. Information from each imager's field-of-view is then be used to discern object size and shape information. The system is designed to be completely automated from launch through failure. The primary focus of the Phase I effort is development of the image processing algorithms involved with detecting, tracking, and identifying the objects of interest. The algorithms will be further refined during the Phase II effort and a prototype of the system will be built. Phase II preliminary field tests are planned in which recreational parachutists leaving an aircraft will be tracked and imaged from two stations. These tests will prepare the equipment and personnel for the recorded observation of a live rocket launch, with booster or stage separation, near the end of the program.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Optra, Inc.	Supporting Organization	Industry	Topsfield, Massachusetts

Primary U.S. Work Locations	
Florida	Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.5 Range Tracking, Surveillance, and Flight Safety Technologies